

RESPONSE TO COMMENTS
SITE CHARACTERIZATION REPORT
INSTALLATION RESTORATION PROGRAM

SUFFOLK COUNTY AIRPORT
FIRE TRAINING AREA
WESTHAMPTON BEACH, NY

Prepared for:

MARTIN MARIETTA ENERGY SYSTEMS, INC.
OAK RIDGE, TENNESSEE

Prepared by:

E.C. JORDAN CO.
PORTLAND, MAINE

JUNE 1989

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ORGANIZATION

This report responds to comments from the Federal, State and County governments on the Suffolk County Airport Fire Training Area (FTA) Site Characterization Report. The report presents the comments from each agency, followed by responses.

The report is organized as follows:

Section 1 - Suffolk County Comments and Responses

Section 2 - New York State Department of Law Comments and Responses

Section 3 - U.S. Environmental Protection Agency Comments and Responses

Section 4 - U.S. Air Force Comments and Responses

SECTION 1

SUFFOLK COUNTY COMMENTS AND RESPONSES

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COUNTY OF SUFFOLK



EUGENE R. KELLEY
Acting Suffolk County Attorney

DEPARTMENT OF LAW

ADDRESS ALL COMMUNICATIONS
IN THIS MATTER TO:

EXPRESS MAIL

February 11, 1988

William Owens
Martin Marietta Energy Systems, Inc.
P.O. Box Y
FEDC Building
Oak Ridge, Tennessee 37830

RE: SUFFOLK COUNTY AIRPORT FIRE TRAINING AREA
SITE CHARACTERIZATION REPORT
FINAL DRAFT - OCTOBER 1987

Dear Mr. Owens:

The enclosed memorandum from Steven Cary to myself contains Suffolk County's comments on the Site Characterization Report, Final Draft, Fire Training Area dated October 1987.

You will note that the first comment addresses the extensive soil contamination found around the Fire Training Area, and the failure to recommend that there be remediation. As you know, Section 6001 of the Resource Conservation Recovery Act (RCRA) [42 U.S.C. 6961] details when Federal, State, and local laws are applicable to Federal facilities:

Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste

MR. WILLIAM OWENS
FEBRUARY 11, 1988
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or hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief.

Although somewhat less expansive than the sovereign waiver provisions of the Clean Water Act, 42 U.S.C. §1323, and the Clean Air Act, 42 U.S.C. §7418, Section 6001 of RCRA parallels the waiver provisions of the two other acts. State of Fla. Dept. of Environ. Reg. v. Silvex Corp., 606 F. Supp. 159, 166 (M.D. Fla. 1985), citing. Senate Rep. No. 94-988, 94th Cong., 2nd Session, at 24 (1976); 122 Cong. Rec. 32, 631 (Sept. 27, 1976). The purpose of the provision "is to require federal agencies to provide leadership in dealing with solid waste and hazardous waste disposal problems by having them comply not only with federal controls on the disposal of waste, but also with state and local controls as if they were private citizens. S. Rep. No. 94-985, 94th Cong., 2nd Sess. 23-24." Matter of Monterey City Disposal Service, Inc., 64 Comp. Gen. 813 (1985).

One glaring deficiency of the report is its failure to consider the impact of applicable local laws upon the determination of the appropriate response to the FTA site. I am enclosing a copy of Article 12 of the Suffolk County Sanitary Code, which regulates Toxic and Hazardous Materials Storage and Handling Controls in the County. Toxic and hazardous materials include "(4) petroleum products, including fuels and waste oils; (5) organic solvents, including petroleum

MR. WILLIAM OWENS
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PAGE THREE

solvents, halogenated and non-halogenated hydrocarbons;" and numerous other substances as well. See Section 1203(n). Section 1217(c)(2) states:

It shall be the responsibility and obligation of any person who discharges, or causes or permits the discharge of any toxic or hazardous material to the ground, groundwaters, or surface waters of Suffolk County to cease said discharge, to reclaim, recover, and/or properly dispose of the discharged toxic or hazardous material and any other substance contaminated therefrom, to restore the environment to a condition and quality acceptable to the commissioner, and to repair any damages caused thereby, all to the satisfaction of the commissioner.

2. It shall be unlawful for the owner or any other person in possession or control of any source discharging or which has discharged toxic or hazardous materials to the ground, groundwaters or surface waters of Suffolk County to fail to reclaim, recover and/or dispose of the discharged toxic or hazardous materials.

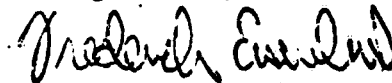
We ask that you reassess your conclusions concerning the need for further remediation by the Air Force in light of the requirements of the Suffolk County Sanitary Code.

MR. WILLIAM OWENS
FEBRUARY 11, 1988
PAGE FOUR

If you have any questions concerning Mr. Cary's technical comments, please call him at (516) 348-2893.

Very truly yours,

EUGENE R. KELLEY
Acting County Attorney



By: FREDERICK EISENBUD
Assistant County Attorney

FE:els
Enclosure

cc: E. Thomas Boyle, County Attorney Designee
Carl Strass, USDOJ
Francis H. Esposito, HQUSAF/JACE
Henry H. Lowman, ANGSC/DEV
Michael C. Washeleski, ANGSC/SGB
Tony Candela, NYSDEC
Christopher Magee, NYSDEC
Tim Larson, NYSDEC
James H. Pim, SCDHS
Elena T. Kissel, EPA
William Fisher, E.C. Jordan Co.
Gerald Harris, ANG
Steven Cary, SCDHS
Sy F. Robbins, SCDHS
Nancy Stearns, Asst. Atty. Gen.
Norman Spiegel, Asst. Atty. Gen.

COUNTY OF SUFFOLK



Patrick G. Halpin
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

DAVID HARRIS, M.D., M.P.H.
COMMISSIONER

TO: Fred Eisenbud, Esq.
Department of Law

FROM: Steven Cary, P.E. *SC*
Chief, Bureau of Groundwater Resources and Reclamation

DATE: February 10, 1988

SUBJECT: WESTHAMPTON AIRPORT - FIRE TRAINING AREA REPORT

Pursuant to the January 14, 1988 meeting with U.S. Air Force officials, E.C. Jordan, representatives from the State Attorney General's office and USEPA, a number of comments were generated by Jim Pim, Sy Robbins and myself regarding the incomplete and flawed site evaluation performed by federal contractors at the fire training area at the County Airport in Westhampton Beach, N.Y. Specific reference is made to the Final Draft of the Site Characterization Report dated October 1987, which is the basis for the following comments.

- Extensive soil contamination was found at the fire training area with high levels of oil, grease, lead and volatile organic chemicals present. Because these contaminants will migrate into the groundwater, the affected soil must be excavated and removed to the satisfaction of Suffolk County. The suggestion that "no further action is necessary" is unacceptable.
- Groundwater quality data presented in the report support the contention that the FTA is a highly probable source of 2-butanone (MEK). The shallow contamination in wells MW-101B and MW-102 implies a nearby source, as does the high concentrations only 40 feet into the water table some 800 feet further downgradient. The report fails to make this connection.
- No hydraulic analysis has been performed to demonstrate that the public water supply well field 3000 feet downgradient will escape the impact of FTA contamination. One of the flaws cited by the department in the original work plan was that no monitoring program was included to address this issue. The project is incomplete until this analysis is completed.
- Given the amount of water quality data produced, a more adequate presentation of the solvents data is required. Due to the

Memo to Fred Eisenbud
Page 2
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widespread occurrence of acetone and methylene chloride in the soils, these should be plotted in plan view and cross section. Groundwater VOC data should also be shown in cross section to assist in recognizing the significance of the source on the contaminant pattern that emerges.

- The regional groundwater flow rate of 300 ft/year appears correct, but the values used to derive this rate are in error. The hydraulic conductivity determined from single-well permeability testing is too low (100 ft/day compared to the USGS literature value of 250 ft/day), but on the other hand, the head gradient selected is too large (.0023 compared to about .001 from Fig. 6-4).

SC/jb
cc: Joseph Baier

RESPONSE TO SUFFOLK COUNTY COMMENTS
BY MR. F. EISENBUD (ASSISTANT COUNTY ATTORNEY)

Mr. Eisenbud's comments were responded to by
Mr. Esposito's letter dated 24 February 1989.
A copy of that letter follows.



DEPARTMENT OF THE AIR FORCE
REGIONAL COUNSEL, EASTERN REGION (JACE)
77 FORSYTH STREET, SW
ATLANTA, GEORGIA 30335-6801
OFFICE: (404) 331-0049
TELEX: (404) 331-2537

24 February 1989

REPLY TO JACE-ER
ATTN OF:

SUBJECT: Suffolk Co Airport Fire Training Area Report Final Draft

TO: Mr. F. Eisenbud
Asst. County Atty.
Suffolk County Dept of Law
158 N. County Complex
Veterans Memorial Highway
Hauppauge NY 11788

1 I have been asked to address your comments to the Final Draft of the Suffolk Characterization Report. These comments will be incorporated into the final report. Since that effort has been delayed, I wanted to answer your comments as soon as possible.

2 You suggest that we reassess our conclusions concerning the need for further remediation of the soil at the Fire Training Area. After careful consideration and review of the facts, we have concluded that the risk through exposure to contaminants at the site are within acceptable ranges as established by US EPA. We have carefully considered other applicable state and local provisions and conclude that we are in compliance.

3. As you know, the accepted means of incorporating RCRA concerns into CERCLA clean up is via the ARAR process. I assume that you would urge us to treat Section 1217(c)(2) of the Suffolk County Sanitary Code as an ARAR. In order to be applicable, relevant and appropriate, the requirement should be promulgated by a state.² 121 (d) of CERCLA notes that ARARs should be a promulgated standard, requirement, criteria or limitation under a State

¹ as outlined in US EPA (9184a). Superfund Public Health Evaluation Manual prepared for US EP Office of Solid Waste and Emergency Response EPA 540/1-86/060

² See CERCLA 121 (d)(A)(ii) and EPA statement at 50 FR 47917.

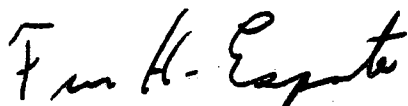
November 20, 1985.

4 Even if the County Sanitary Code qualified as a state promulgated provision, we conclude that it is not capable of being characterized as a standard requirement criteria or limitation. The only operable standard or criteria we can discover in the Suffolk County Sanitary Code is that one must

restore the environment to a condition and quality acceptable to the commissioner, and to repair any damages caused thereby, all to the satisfaction of the commissioner.

We can not predict or determine what portions of the site might be characterized as "the environment." Most important, we can not perceive a code requiring "satisfaction of the commissioner" as being that type of "standard requirement, criteria or limitation" contemplated by Congress in the CERCLA. Standing alone, the requirement is void for vagueness. To attempt to incorporate it into the limitations imposed on a CERCLA clean up activity would press the guidelines of that law beyond credibility.

5 The Air Force has met or exceeded all applicable, relevant and appropriate requirements at the Suffolk County Airport Fire Training Area. There is clearly no threat to the human health and environment posed by the lead content of the soil at the site. We suggest that if the state or county has some additional concern, 9h 121 suggests that the state might pay for the additional work. The Air Force would allow the State of New York or Suffolk County to perform the additional work or fund same.



FRANCIS H. ESPOSITO Major, USAF
Regional Environmental Counsel

CC DOJ EC Jordan

RESPONSE TO SUFFOLK COUNTY COMMENTS BY STEVEN CARY (CHIEF, BUREAU OF GROUNDWA-
TER RESOURCES AND RECLAMATION)

COMMENT 1

Comment 1 suggests that the "extensive soil contamination: with "high levels of oil, grease, lead and volatile organic chemicals present" at the FTA will migrate into the groundwater, and remediation is therefore mandatory.

Remediation should be undertaken based on some action goal. This action goal is usually determined by regulatory standards, or, if these are lacking, as is generally the case for contaminants in soils, then an action level is established by consideration of risk. Jordan's risk assessment conducted in accordance with USEPA guidelines indicated no significant risk from soils.

The FTA has been situated at or near its present location since before 1961. Over time, procedures were changed to use less fuel during fire training and to prevent infiltration of the fuel into the ground. These procedural changes included moving the FTA from the sandy area adjacent to the hardstand to its current location on the concrete pad, and installing concrete berms around the burn area to contain the fuel (JP-4 only).

Extensive soil sampling around the FTA indicated relatively low ppm levels of volatile and semivolatile organic compounds and lead in the near surface soils. It would be reasonable to expect that over the 25 or more years of operation of the FTA, that if these contaminants were to have significantly impacted the groundwater, they would have done so by now.

However, analyses of groundwater indicated the presence of lead to be much lower than drinking water standards would allow, no detectable oil and grease (petroleum hydrocarbons), and only occasional, low detections of benzene, toluene and xylene in the near vicinity of the FTA. Volatile organic chemicals were detected in soils in only 6 locations, and the maximum concentration detected for any volatile organic compound was xylene at 2.8 mg/kg (parts per million). Other volatile compounds were detected only at less than 1 ppm concentrations in soils. In order to estimate what the impact of further migration of the volatile organics found in the soils might have on the groundwater, Jordan has applied the USEPA organic leaching model to the maximum concentrations of volatile organic compounds found in the soils to estimate what leachate concentrations from these contaminants would be. This leachate would then be diluted several fold upon merging with the groundwater and migrating downgradient.

<u>VOC</u>	<u>Maximum Conc in soil, ppm</u>	<u>Estimated leachate conc, mg/l</u>
Xylene	2.8	0.032
Benzene	0.009	0.0015
Ethylbenzene	0.1	0.003
Tetrachloroethylene	0.037	0.0015
Toluene	0.13	0.0058
Chlorobenzene	0.02	0.0015

The groundwater data also reflect the low potential for contamination of groundwater by compounds found in the soils at the FTA. Data collected in the

site investigation support a recommendation of no further action with regard to residual compounds found at the FTA or in the site groundwater.

COMMENT 2

Comment 2 suggests that the 2-butanone contamination found in groundwater is directly attributable to activities conducted at the FTA due to the shallow presence of 2-butanone in wells MW-101B and MW-102, and the deeper presence in the downgradient well, MW-107A.

Jordan has concluded that the presence of 2-butanone is unrelated to Guard activities at the FTA based on the finding of 2-butanone upgradient of the FTA. Jordan suggested at the presentation of the draft report on January 14, 1988, that unauthorized dumping may have occurred in the vicinity of the FTA, perhaps even into one of the unsecured existing PVC wells at the FTA.

Upgradient sources could also be responsible as slight upward gradients exist near MW-101 which might tend to keep a plume of dissolved contaminants near the surface. Vertical groundwater gradients become downward further downgradient from the FTA, which together with infiltrating precipitation would tend to cause the plume to move downward. The interpretation of the source of the 2-butanone is not as simple as the comment suggests, although the presence of an unauthorized discharge(s) near the FTA unrelated to Guard activities is certainly possible.

COMMENT 3

Comment 3 suggests that the hydrogeological assessment is incomplete because potential impacts on the downgradient municipal wells of contaminants found in the vicinity of the FTA cannot be addressed.

Had the contaminant assessment indicated that the contaminants found in groundwater were due to ANG activities conducted at the FTA, then Jordan would have recommended another phase of investigation to describe the plume and assess the potential of impact to the municipal wells. Since the report concludes that the 2-butanone was not attributable to ANG activities, further action on that contamination is outside the limits of the court-ordered study. Therefore, a second phase to investigate downgradient contamination was not recommended for this investigation. However, Jordan did advise in the report that a potential for impact of 2-butanone did exist, estimated what the resulting concentrations might be, and suggested that some action be taken to address this potential problem.

It should be noted that additional investigation is currently underway to attempt to locate the source of the 2-butanone. This investigation includes a record search, installation of additional upgradient monitoring wells, and sampling groundwater from the monitoring wells near the FTA.

COMMENT 4

Comment 4 suggests that the data for soils and groundwater could have been more clearly, or graphically, present in the form of more contour plots, for volatiles in soils, and especially for volatiles in groundwater in a vertical profile. The commenter suggests that this is particularly important for methylene chloride and acetone.

Most of the instances of methylene chloride and acetone were attributable to contamination of samples by these compounds during laboratory preparation, a common occurrence, and the detection of these compounds was not considered significant. The depths of the soil and groundwater contaminants were considered in the interpretation. Additional contour plots and cross sections are not expected to add significantly to the content or clarity of the report.

COMMENT 5

The comment suggests that, although there is agreement with the average groundwater velocity calculated for the site (about 300 feet per year), that two of the factors that go into the calculation were in error. The comment suggests that the USGS literature value of 250 feet per day for hydraulic conductivity is more appropriate, and that a hydraulic gradient of 0.001 determined by the commenter from another USGS publication is also more correct. Jordan believes that the use of site specific data is to be preferred to literature values. The values calculated for the site were very consistent

and reproducible. The data were considered valid and representative. The hydraulic gradient calculated for the site ranged from about 0.002 to 0.003. A value of 0.0023 was selected as an average for the calculation of the groundwater velocity. In checking the commenter's referenced value for the gradient, Jordan obtained a value of 0.0017, not too different from the site specific value determined in the investigation. Variability of the gradient during the course of the year would be expected, depending on the patterns of precipitation and recharge. Jordan concludes that the values used for the hydraulic conductivity and hydraulic gradient are valid and prefers them over literature values.

SECTION 2

NEW YORK STATE DEPARTMENT OF LAW COMMENTS AND RESPONSES

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STATE OF NEW YORK
DEPARTMENT OF LAW
120 BROADWAY
NEW YORK, NY 10271
(212) 341-2454

ROBERT ABRAMS
Attorney General

JAMES A. SEVINSKY
Assistant Attorney General in Charge
Environmental Protection Bureau

February 2, 1988

Express Mail

William Owens
Martin Marietta Energy
Systems, Inc.
P.O. Box Y
FEDC Building
Oak Ridge, Tennessee 37830

Re: Suffolk County Airport
Fire Training Area
Site Characterization Report
Final Draft - October 1987

Dear Mr. Owens:

Pursuant to the Interim Consent Decree (NYS v. USA) the State of New York submits the following comments on the Site Characterization Report, Final Draft, for the Fire Training Area dated October 1987. As we indicated in our telephone message to you, we were not able to submit these comments by February 1, 1988 because certain water level data were not made available to us by E.C. Jordan until late afternoon on Friday, January 29.

Soil Contamination

A soil sampling program conducted at and in the environs of the Fire Training Area ("FTA") shows extensive contamination with oil and grease at levels as high as 49,000 ppm (JSS-33) with the contamination extending to a depth of 35 feet below the surface. The components of "oil and grease" consist in part of exotic petroleum hydrocarbons whose potential effect on human health and the environment has not as yet been determined. In addition, soil at the FTA was also found to be contaminated, albeit at relatively lower levels, with lead, volatile organic compounds and

semi-volatile organic compounds. Most of those chemicals are listed as hazardous substances pursuant to CERCLA, 42 U.S.C. § 9601 (14).

In light of the wide spread nature and high concentrations of contaminants in the soil; the fact that these contaminants will migrate into the groundwater, albeit slowly; the fact that the toxicology of many of the contaminants is unknown; the fact that the FTA is located in a pristine area with a nature preserve located to the immediate east of the site; and especially in light of the fact that public water supply wells are located approximately 3,000 feet downgradient from the site, it is not acceptable to conclude as the Report does, that "no action is necessary" without considering the feasibility of remedial action. A feasibility study should be undertaken to identify remedial options that would reduce or eliminate contamination in the soil and/or ensure that such contaminants do not migrate from the site via groundwater or by any other means, e.g. wind blown particulates.

In the alternative, a long-term groundwater monitoring program should be considered since many of the contaminants, in particular the polynuclear aromatic hydrocarbons (PNAs), are migrating toward the water table in a manner which is expected to result in groundwater contamination at some point in the future. Given that benzo(a)pyrene and benzo(b)fluorathene are known carcinogens and the other PNAs are suspected carcinogens, a monitoring program must be given serious consideration. The Report fails to address this issue.

We are mindful of the concerns expressed at the January 14, 1988 meeting with regards to cleanup standards. The issue of cleanup standards, however, is certainly not unique to this site. Although the process of selecting standards is not simple, there are procedures and guidance for undertaking this process, see Superfund Amendments and Reauthorization Act of 1986, Section 121, concerning ARARS. It would be premature, however, to undertake this process before the remedial feasibility study has been completed.

Groundwater Contamination

The groundwater sampling program showed extensive contamination of the groundwater at the FTA with 2-butanone (MEK) at levels as high as 56,000 ppb (MW-107B). In addition other hazardous substances, although at much lower

levels were found in the groundwater. These include benzene, acetone, toluene, xylene, and 1, 1-dichloroethane.

The Report, however, takes the position that the 2-butanone contamination is not the result of activities at or related to the FTA but is attributable to some, as yet unknown, upgradient source. This conclusion is premised upon the presence of 2-butanone in a well (MW-101B) which the Report characterizes as being "upgradient" from the FTA. Whether well 101B is an upgradient well has, however, not been established. Well 101B is in close proximity to both a burned out trailer where trailer fires were simulated and a storage shed used for FTA activities. Moreover soil surrounding the well was found to be contaminated with oil and grease. The absence of 2-butanone in the soil can be explained by the fact that this chemical is highly mobile and quickly volatilizes. Consequently, it is possible that the contamination at well 101B is in fact due to activities at the FTA.

It is critical that a well or wells be installed at a location which is undisputedly free from influence of FTA related activities so that upgradient groundwater conditions can be accessed and the issue resolved. The location should be selected with input from the State and from Suffolk County.

We also think it advisable that further field studies be undertaken in a phased approach, to determine whether a narrow diving plume of contaminants is migrating from the site (contrary to the Report's conclusion, the State believes that the water level data indicates that there is a significant vertical gradient). In addition further field work is advisable to determine whether a groundwater divide exists thereby directing the contaminants in two directions, southwest and southeast of the site.

Technical Comments

The State of New York makes the following technical comments:

1. The Report states that P-3, the furthest downgradient measuring point, was sampled. Data generated by this event should be included in the Report.
2. A compilation of all tentatively identified compounds, both in soils and groundwater, should be included in the Report.

3. Sufficient variation in water levels was observed to justify the inclusion of contour maps for each of the five rounds of water level measurements taken in the immediate vicinity of the FTA. In addition, a groundwater contour map should be generated and included in the Report, which reflects data obtained by E.C. Jordan personnel during a large-scale round of water level measurements taken either on June 17 and June 19, 1987. These rounds included measurements of Suffolk County wells and possible New York State wells.

4. Communications between E.C. Jordan personnel and Laine Vignona of the New York State Department of Law, subsequent to January 14, 1988 indicates that some of the water level data provided in the Report is inaccurate. The Report should be corrected and new contour maps generated as appropriate.

5. At the January 14, 1988 meeting personnel from E.C. Jordan indicated that with respect to samples obtained from well 101B, trip and field blanks were checked for the presence of 2-butanone. This should be indicated in the Report. Moreover, well 101B should be resampled in light of the fact that samples from well 101B obtained in April, 1987 did not show the presence of 2-butanone but three months later, on June 19, 1987, samples from this well indicated elevated levels of 2-butanone.

If you have any questions, please do not hesitate to contact Laine Vignona at 212-341-2480, or the undersigned.

Sincerely,



NANCY STEARNS
NORMAN SPIEGEL

Assistant Attorneys General

NS:FC

cc: Carl Strass, USDOJ
Francis H. Esposito, HQUSAF/JACE
Henry H. Lowman, ANGSC/DEV
Michael C. Washeleski, ANGSC/SGB
Tony Candela, NYSDEC
Christopher Magee, NYSDEC
Tim Larson, NYSDEC
Fred Eisenbud, SC Dept. Law
Brian McCaffery, SC Dept. Law
James H. Pim, SCDHS
Elena T. Kissel, EPA
William Fisher, E.C. Jordan Co. ✓
Gerald Harris, ANG
Sy F. Robbins, SCDHS

RESPONSE TO STATE OF NEW YORK DEPARTMENT OF LAW

Nancy Stearns/Norman Spiegel, Assistant Attorneys General

SOIL CONTAMINATION COMMENTS

The comments regarding soil contaminants comments center around two issues:

(1) the need for a feasibility study (FS); and (2) the future potential impacts of the FTA soil contaminants on groundwater.

The purpose of the remedial investigation and risk assessment conducted at the site was to evaluate the existing conditions and to evaluate the risks posed. The risk assessment (Section 11 of the site characterization report) indicated that no significant risk existed as a result of site soils and therefore no further investigation or evaluation would be necessary.

In regard to the need for an FS, the first step in an FS is to develop remedial response objectives (i.e., cleanup standards) for the site. These response objectives are either risk based (i.e., developed to reduce risk to an acceptable level) or are based on established criteria (ARARS). Since the risk assessment performed by Jordan concluded that there are no significant risks for the site contaminants encountered and no existing State or Federal criteria are exceeded by the site soils, these response objectives would state that no action is necessary. Further, it is not necessary to proceed through an FS prior to making a no action decision.

USEPA Region II has signed records of decision (RODs) for the no further action alternative without an FS (an example is the Cooper Road site). These decisions were based on a remedial investigation and risk assessment which showed no significant risk from the site. We therefore believe that an FS is not necessary for this site.

To assess the future impacts of soil contaminants on groundwater Jordan has applied the USEPA organic leaching model on the maximum concentrations of volatile organic compounds found in the soils to estimate what the leachate concentrations from these contaminants would be. This leachate would then be diluted several fold upon merging with the groundwater and migrating downgradient. The results of this model are shown in the table below.

<u>VOC</u>	<u>Maximum Conc in soil, ppm</u>	<u>Estimated leachate conc, mg/l</u>
Xylene	2.8	0.032
Benzene	0.009	0.0015
Ethylbenzene	0.1	0.003
Tetrachloroethylene	0.037	0.0015
Toluene	0.13	0.0058
Chlorobenzene	0.02	0.0015

The groundwater data also reflect the low potential for contamination of groundwater by compounds found in the soils at the FTA. Data collected in the site investigation support a recommendation of no further action with regard to residual compounds found at the FTA or in the site groundwater.

An additional fact to be considered is that the FTA has been used since at least as early as 1961. Given the site geology and hydrogeology it is reasonable to expect that if the site soils were to have a significant effect on the groundwater, it would be evident by now.

GROUNDWATER CONTAMINATION COMMENTS

The comments within this section primarily concern the possibility of fire training activities being the source of the 2-butanone, the position of MW-101B as an upgradient well, and the presence of a groundwater divide at the site.

Using the current water levels and groundwater contour maps obtained during the investigation, Jordan includes that MW-101B is located hydrologically upgradient of the FTA. It has also been concluded that this well is at a sufficient distance from the FTA to provide accurate background groundwater quality.

The NYS Department of Law contends that the 2-butanone contamination may be influenced by FTA activities. Although there are measurable concentrations of oil and grease in the surface soils near MW-101B, these concentrations are relatively low. The soil concentrations near MW-101B, which range from non-detect (JSS-15) to 170 ppm (JSS-25 and JSS-56), are comparable to the background samples of 76 ppm and 240 ppm (JSS-31 and JSS-32). There is no evidence of significant soil contamination from the trailer fires near MW-101B.

Based on the finding of the 2-butanone upgradient of the FTA, Jordan has concluded that the presence of 2-butanone is likely to be unrelated to Guard activities at the FTA. Jordan suggested at the presentation of the draft report on January 14, 1988 that unauthorized dumping may have occurred in the vicinity of the FTA, perhaps even into one of the unsecured existing PVC wells at the FTA. Upgradient sources could also be responsible as slight upward gradients exist near MW-101 which might tend to keep a plume of dissolved contaminants near the surface. Vertical groundwater gradients become downward further downgradient from the FTA, which together with infiltrating precipitation would tend to cause the plume to move downward.

Groundwater flow contours have been enclosed for June 19, 1987 and April 30, 1987. Water levels measurements taken on other dates do not vary significantly from these dates. Hence, the calculated hydraulic gradient and the interpretations of groundwater flow direction remain consistent over the course of the study. These groundwater flow contours do not suggest the presence of a groundwater divide near the FTA. Jordan believes that no further field work is required to examine groundwater flow directions near the FTA (see also response to Comment 3 below).

The ANG is currently undertaking additional investigation to evaluate the source of the 2-butanone groundwater contamination. Additional monitoring wells will be installed further upgradient of the FTA and all the monitoring wells will be sampled and analyzed for volatile organic compounds. In addition, a record search of ANG and Suffolk County Airport Authority records has

been performed in an attempt to locate parties who may have used or disposed of 2-butanone on Airport property.

TECHNICAL COMMENTS

1. With regard to sampling piezometer P-3, P-3 was sampled and the data is included in Appendix I and is shown in Figure 6-7 and Table 6-2 of the report.
2. All tentatively identified compounds will be included in Appendices E and I.
3. Groundwater contour maps are included in the report for water level rounds taken on April 30, 1987 and June 19, 1987. These groundwater contour maps reflect the general range of water levels obtained at the site. Although each round of water level data provide slightly different contour lines, the groundwater flow direction and gradients remain consistent for all the data. A more regional groundwater contour map, which includes all the wells in the vicinity of the Suffolk County FTA site, is shown on Figure 1 (attached).
4. All water level data have been reviewed, and a revised water level observation table is included in Appendix H of the report. Conversations with Laine Vignona on January 29, 1988 verified the water levels

LEGEND

- APPROXIMATE GROUNDWATER SURFACE CONTOURS (FEET, MSL)
- MEASURED WATER LEVEL ON JUNE 19, 1987 (FEET, MSL)
- INTERPRETIVE GROUNDWATER FLOW DIRECTION
- EXISTING WELLS
- WELLS INSTALLED BY E.C. JORDAN CO. FROM MARCH TO APRIL 1987

NOTES:

ONLY E.C. JORDAN WELLS UTILIZED FOR WATER LEVEL INFORMATION IN THE FTA AREA

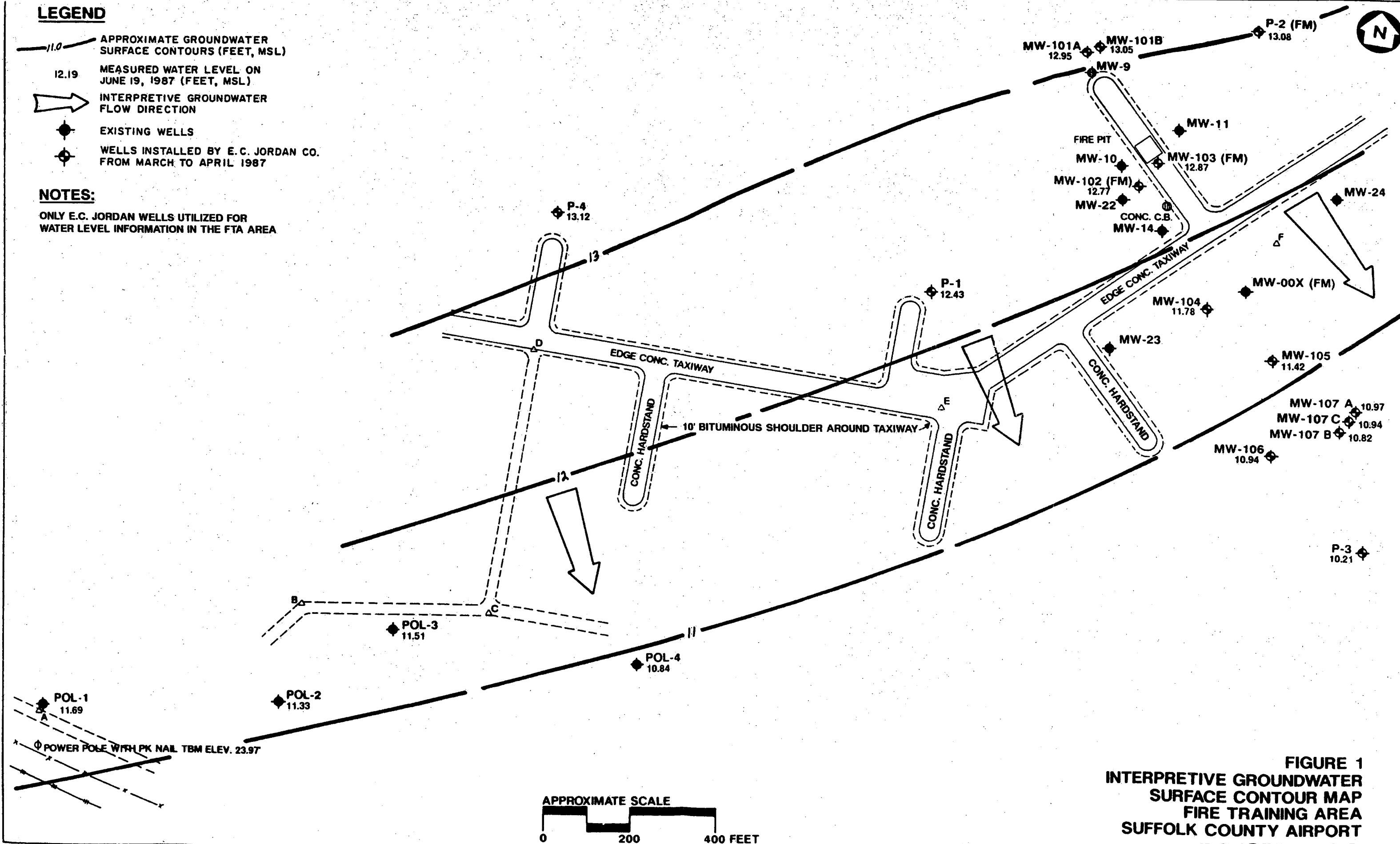


FIGURE 1
INTERPRETIVE GROUNDWATER
SURFACE CONTOUR MAP
FIRE TRAINING AREA
SUFFOLK COUNTY AIRPORT
ECJORDAN CO

presented in the current water level observation table. All groundwater contour maps are based on this data.

5. Trip samples and field blanks were collected on both sampling events. The results are included in Appendix I (JSB1XXXX01, JSB2XXXX01, JSB1XXXX02, JTB1XXXX01, and JTB2XXXX01). No 2-butanone was found in trip and field blanks above detection limits. We believe that no additional sampling is needed to support the conclusions of this report.

SECTION 3

U.S. ENVIRONMENTAL PROTECTION AGENCY AND COMMENTS AND RESPONSES

890621
0019.0.0

FEB 24 1988

Major Scott L. Smith, Chief
Environmental Operation Branch
Directorate of Engineering and Services
Headquarters United States Air Force
Washington, D.C. 20332-5000

Re: Comments on the Final Draft, Site Characterization Report,
Installation Restoration Programs. Suffolk County Airport,
Fire Training Area, Westhampton Beach, New York, October 1987.
(Vol. 1 Report)

Dear Major Smith:

The U.S. Environmental Protection Agency Region II (EPA) has reviewed the above referenced Report. EPA's main concern is that this Study did not adequately evaluate the potential for contaminant migration and impact.

The following summarizes our review and addresses the conclusions made in the Report. Detailed comments are given in attachments to this letter.

- a) We have reviewed your risk assessment and found that the major pathway of concern to the general public (the migration of contaminants from the soil into the ground water and then into the drinking water supply system) was not considered due to lack of information (See Attachment C). Without adequate ground water monitoring data, an assessment of risks to the public was not completed. EPA's position is that a determination of no further action to address the FTA site is premature due to the incompleteness of this study.
- b) We agree that the sampling suggests that there is no significant fuel contamination in the ground water at the study site at this time. However, the soil sampling showed points of relatively significant contaminant concentrations, especially total petroleum hydrocarbons. These points of contamination may represent a source continuing to release oil and grease to the ground water. The possibility of migration of xylene and Polynuclear Aromatic Hydro-carbon through the soil to the ground water also exists. Monitoring of the ground water in the FTA area should continue to determine if any leaching of these contaminants is occurring.
- c) The hydrogeological study must be expanded in order to identify and assess the source of 2-Butanone and additional sources of contamination in the entire area of the former Air Force Base.

-2-

The FTA Site is a very small area within a large former Air Force Base. Focusing the study only on this area without considering the remaining property, which includes the Air National Guard and Suffolk County Airport, is not sufficient for evaluation of the potential impact the contaminants may have on the ground water.

It is advisable to concentrate attention on the entire area of former AF Base without dividing it into different small pieces. It is believed that soil and ground water at different points of this large area have been contaminated. One well-planned investigation should result in a realistic site characterization. Until a complete study is completed, it is difficult to outline remediation options.

Should you have any questions regarding the enclosed comments, please contact Galina Tsoukanova of my staff at (212) 264-6665.

Sincerely yours,

Carole Petersen, Chief
Site Investigation Section

Attachments

cc: Major Harris, NYANG
John Iannotti, NYSDEC,
William W. Owens, HAZRAP Project Manager ✓

ATTACHMENT A

EPA COMMENTS

Regarding Site Characterization Report Installation Restoration
Program Suffolk County Airport Fire Training Area
Westhampton Beach, New York

Page 27, 5.5.1, Table 5-4. An explanation is needed regarding the following: As the Report states, lead was found above the method detection limit (10) in 73 soil samples. Where are these 73 soil samples located? Why are not all of them shown on Table 5-4? There are only 34 samples in this Table with lead concentrations above DL (with duplicates and replicates together).

Page 38, 5.5.2. There are some discrepancies in the Report: "oil and grease contamination is presented at concentrations above 50ppb as deep as....". But the Report states that all analytical data for soil is given in "ppm". (Page 38, 5.5.2.). This should be clarified. The indication of oil and grease concentrations on Fig. 12 and Fig. 13 does not always correspond with data in the text of the Report.

3. Page 38, 41, 42, 43. (Table 5-6) The contamination of FTA area by oil and grease is characterized mainly by a few definite points where the fuels were discharged and spilled. The analytical results from JSSs and JTBs located on these particular points show more significant contamination of oil, grease, and hydrocarbons. For instance, the high concentrations for oil and grease are shown in Table 5-6 for the following shallow JSSs: 49,000 ppm for JSS-33; 27,000 ppm - 8,500 ppm for JSS-30; 23,000 ppm for JSS-11; 21,000 and 6,300 ppm for JSS-9; 19,000 ppm and 1,500 ppm for JSS-21. The profiles 5-15 and 5-16 illustrate relatively high concentrations of oil and grease in the soils of the middle depths of the following JTBs: 4,300 ppm in JTB-3 (depth = 15 feet) 3,400 ppm in JTB-4 (depth 15 feet). And finally, oil and grease were found in the soil samples in concentrations from 27 ppm to 450 ppm even below ground water level (JTB-2, JTB-4, JTB-5, JTB-9). The distribution of VOCs is similar to that of oil and grease (Fig 5-18; Fig. 5-19; Fig 5-20). Vertical distribution of xylene at depths along JTB-2 is very deep (only a few feet above water level). We believe that the possibility of migration of these contaminants into the ground water exists. The absence of hydrocarbons or PNAs in the ground water could be considered as a result of the the incomplete scope or quality of the investigation.

4. Page 41, Fig.5-15; Fig. 5-19. Was it possible to perform an analyses for VOC in soil samples below ground water, similar to it being done for oil and grease? If so, why were they not included in the scope of work?

5. Page 51; 5.5.4, Fig. 5-1. As the Report states, six soil samples (from JCP-1 to JCP-6) shown on Fig. 5-1, were analyzed for PCB/Pesticides, but none of these JCP samples were shown on Fig. 5-1. An explanation is needed.

Page 72, 78. It is unlikely that such contaminants like oil and grease can migrate due to wind action.

Page 77. If unauthorized and improper disposal of waste is suspected in spite of terminated use of FTA, perhaps improving the security of the fence around the Airport is advisable.

Fig. 5-12; Fig. 5-13; Fig 5-14. Soil samples in the Report show the lateral distribution of such contaminants as oil and grease, hydrocarbons, and PNA at depths of no more than 4-5 feet. But at the points of repeated applications of fuels/ solvents to the soil, Fig. 5-15 to Fig. 5-22 contaminations occurred deeper and sometimes below ground water level, as it was found in JTB-2 at the depth of 35 feet. If one considers that the ground water level is located 34 feet below the surface, these contaminants may contribute to the ground water at any time. Additional ground water monitoring at and around the FTA is advisable.

9. Page 66; Table 6-2. The highest concentrations (56,000ppb and 14,000ppb) of 2-Butanone were found in deep MW-107B, which was screened at the depth of 88-103 feet deep; and 1,400ppb concentration of 2-Butanone were found in shallow MW-101B, which was screened at 34.2 feet to 50feet. However, in Appendix E the findings of 2-Butanone in these wells are shown at depths of 1.0, 1.5, 2.0. An explanation is needed.

10. Which two of all soil samples were chosen as background samples and what is the result of their chemical analyses? These background samples were included in Subtask 2A.3 - Soil Sampling, Work Plan, 1986 (page 12).

11. It is a good practice to show the oil/grease field screen results on the maps and the profiles (Fig. 5-12; Fig. 5-13; Fig. 5-14). Why do similar maps and profiles for VOC's (Figures 5-18, Fig. 5-19, Fig. 5-20) lack these indications, and where, in the Report is this information?

12. The Work Plan Report, 1986, page B-3, states the necessity to locate and describe any existing private water supply wells. They still have not been identified. It is advisable to find and present information concerning household water supply wells in the 1 mile radius in order to estimate future risk assessment.

13. Table 6-2; Fig. 6-7. Due to its density, we would not expect to find 2-Butanone in the lower portion of aquifer. Were the results from MW-107A, and especially from MW 107-B, accurate?

-3-

14. Appendix E. It is advisable to make the Tables of soil chemical analyses more readable and define data qualifiers (like B, J, and JB). The numerical order of all pages is necessary. The Appendix of the Report must be accessible for professionals as well as for the general public.
15. Appendix E. The Report states that analytical results of soil samples were taken at the surface, and at depths of 2 and 4 feet. Then why are the depths of all soil samples in Appendix E shown only as a "0" (the surface?). An explanation is needed.
16. Appendix E. In the Appendix Tables, symbols "JTB-0022; JTB-0031; JTB-0032; JTB-0041 - are used. An explanation for this Table is needed to describe what these symbols refer to. The results listed appears to correspond to locations JTB-2, JTB-3, JTB-4
17. In general this Report was not organized well. There are many discrepancies found in transferring and summarizing data from the Appendix E, to the Report itself. It is difficult to find needed data in Appendix E without numerical order of pages or Tables. The Appendix E lacks clarifications of the symbols. The entire Appendix needs to be checked for accuracy.

Attachment B

Summary

In this Final Draft phase of the study, sufficient data to select any alternatives for clean-up actions is not available. The goal of this study - to evaluate the potential for contaminant migration and impact to receptors - is not completely achieved.

The FTA is only one part of the former AF Base area currently leased to different tenants (SCA, ANG, Private sectors).

The ANG and SCA together is a large area with small contaminated sites and landfills scattered over it as a result of past military and present civilian activities. Several of these small contaminated sites have been identified; some of them are in the process of discovery; while the finding of others is a matter of the future. Recently, from the Record Search Report (1986), we were informed of the existence of a few contaminated sites within the former Air Force Base. They are: Site-1, Site-2, FTA, and POL. Additional information about locations of 5 small sites on ANG are given in HMTC Report which has been completed as the recent Phase-1, Record Search. According to information obtained from the Department of Health Services (November 17, 1986), the plume of fuel contamination was discovered in ground water in the area of ANG.

The RI/FS study was implemented only for FTA area. The others - Site-1 and Site-2 were subjected only to a Record Search.

The soil at the FTA area and its vicinity was contaminated with lead, oil and grease, VOCs and SVOCs. According to the data presented in this Report, the level of contaminants are not high in general, but there are a few definite points with significant levels of some contaminants where the fuel and solvents were applied repeatedly. The analytical results of soil samples from borings JTB-2, JTB-3, JTB-4 are evidence to the soil contamination. The profiles (from Fig 5-15 to Fig 5-22) show the deep distribution of oil and grease, xylene, and PNA throughout all of the boring depths. Therefore, the possibility of migration of these contaminants into the ground water exists. The absence of contaminants (hydrocarbons, PNA) in the ground water analyses may be considered as a result of incomplete scope or lack of quality of the investigation.

The findings of 2-Butanone in the site ground water in deep upgradient and downgradient wells and in relatively shallow monitoring wells are the evidence of lateral and deep distributions of 2-Butanone. In spite of the fact that 2-Butanone is chosen as a main contaminant of concern, the RI did not define the magnitude, distribution, and source of the 2-Butanone ground water contamination. The risk of this contamination is not known but may exist, especially in relation to the wellfield water supply wells located approximately 0.75 miles downgradient. Further investigation is recommended.

-2-

Since the source of 2-Butanone has not been discovered, further hydrogeological investigations should cover a larger area around FTA, especially upgradient, by installing the appropriate amount of monitoring wells to adequately account for spatial variability in background water quality data.

A comprehensive hydrogeological program is needed to prove the absence or existence of a 2-Butanone plume and to outline its contours (if the plume exists). The migration of 2-Butanone must also be traced toward the downgradient ground water flow.

The hydrogeological condition of the FTA should not be considered separately without covering other nearby sites which contributed contamination to the ground water. Therefore, the full scope of work should be expanded for identifying and assessing the additional sources of contamination.

The FTA Site is a very small area within a large former AF Base. Focusing the study only on this area without considering the remaining property of recent ANG and SC Airport is not sufficient for an evaluation of the potential impact the contaminants may have on the ground water.

It is advisable to concentrate attention on the entire area of the former AF Base without dividing it into different small pieces. It is believed that soil and ground water in different points of this large area have been contaminated. One well-planned investigation should result in a realistic site characterization.

Attachment C

Risk Assessment

Summary:

We have reviewed the risk assessment presented in the final draft Site Characterization report for the subject site. In general, the Fire Training Area (FTA) is being assessed for its contribution to overall contamination at the entire facility. It is considered a semi-secure, industrial area which is no longer used for training activities, and has virtually no access by the general public. Therefore, the risk assessment considered only one potentially exposed group, the onsite workers. The major routes of exposure considered were inhalation of fugitive dust and dermal absorption of soil. Both were determined to be an insignificant risk to the workers.

Although there were inconsistencies found in the risk assessment (see specific comments), it is unlikely that these two routes of exposure would pose a significant health risk to workers. However, the major pathway of concern to the general public is the migration of contaminants through the groundwater into drinking water supply systems. This route of exposure was completely eliminated from the risk assessment due to lack of information. Potential exposure points for groundwater such as nearest potable well (private or municipal), nearest agricultural well, or industrial well were not provided. Without adequate groundwater monitoring data, an assessment of risks to the public was not made. This is an omission that the authors do recognize. Additional data should be obtained to complete this assessment. In addition, the inconsistencies in the quantitative assessment, particularly in determining risks due to dermal absorption, should be clarified. The attached specific comments should be addressed.

Detailed Comments:

1. The risk assessment assumes that construction activities onsite would be limited to a five week period. Is this accurate and will the site be secured and therefore inaccessible to all personnel, as well as the public?
2. Page 84 (11.6.1) - "USEPA guidance and scientific literature" should be referenced. The Superfund Exposure Assessment Manual (Draft-1986; Final Draft 1987) or consultation with the Exposure Assessment Group at EPA Office of Research and Development is recommended, especially in cases involving dermal exposure.
3. What is the basis of using a concentration of 1.0 ug/m^3 to represent disturbed soil concentrations of lead?

-2-

4. Page 88 (11.7.2) - As discussed in the second paragraph, the NAAQS could be used in calculating the inhalation exposure scenario, not "a given exposure scenario" as stated.

5. An accurate summary of contaminant concentrations used as input into the risk calculations is needed. For example, the PNA concentrations discussed in the first paragraph on page 86 (.076 ug/g and 9.6 ug/g) do not correspond to levels discussed in the summary of organic contaminants (Section 5.5.3) on page 38, in which the maximum level of PNA is listed as 12.2 ppm. In addition, this level (12.2ppm) does not seem to reflect the data for sample JTB-2 (JTB-0027) appearing in Appendix E. If average concentrations were used, this should be clearly stated. In addition, a worst-case risk using maximum concentrations should be done to set an upperbound risk level. It should also be noted that Table 5-8 does not reflect the concentration of phthalate found at JSS-2 (.635 ppm) which is the level reported in the text.

6. The risk calculation for dermal exposure described on page 88 (bottom) is poorly represented. Again, a clear statement of contaminant concentrations used should be presented. It is also difficult to follow through the calculations for the estimation of risk since only results are presented. Conclusions of insignificant risk from dermal exposure are stated on the top of page 89, however, there is no clear basis for this conclusion. A description of the calculation step to arrive at the final risk characterization should be provided a summary table such as Table 11-5 (page 92) which was provided for the inhalation risk estimate should also be provided for dermal exposure. The formula used to calculate dermal absorption was never clearly stated. If the inhalation exposure formula was used, the following questions should be answered: Was "fraction absorbed" (20%, 40%) also used in the calculation of dermal exposure? These values were taken specifically from lead absorption (through inhalation) levels. It should be noted that the formula used by EPA for dermal absorption assumes conservatively that the entire amount of contaminant reaching the skin and adhering will be absorbed. If any other assumptions were made during this calculation, they should be stated and justified.

Soil adherence rates used in the Superfund Exposure Guidance range from 1.45 to 2.77 mg/cm² [(Harger JRE. 1970. A model for the determination of an action level for removal of crene contaminated soil. Memorandum to P.S. Cole, Executive Director. Lansing, MI: Toxic Substance Control Commission (October 25, 1979)); therefore, using a value of 1.0 mg/cm² may not be the most most conservative estimate.

Page 88 (11.7.2) - The second sentence states that "the body dose levels of contaminants form direct contact exposure were considered insignificant based on discussions in Section 11.6.3". A conclusion of insignificance cannot be based on Section 11.6.3 since this section only discusses the calculation of body dose.

-3-

levels. There is no basis for determining what an insignificant body dose level is... the dose must be input into the calculation of risk in order to determine significance.

6. The toxicity profiles appearing in the Appendix lacked certain information. For example, xylene is described as a non-carcinogen, however, no further information is provided regarding non-carcinogenic effects.

7. Were the soil samples which were analyzed for lead filtered? If so, what size filter was used? This is an important factor which could affect detectable levels of organic forms of lead. Since it is believed that lead contamination originally existed in the organic form, which has different properties than inorganic lead, the possibility of its existence in this form should be addressed.

RESPONSE TO COMMENTS BY CAROLE PETERSEN, CHIEF OF THE SITE INVESTIGATION

SECTION (EPA)

SUMMARY COMMENTS

a&b These comments express concern that "soil sampling showed points of relatively significant contaminant concentrations...which may represent a source continuing to release oil and grease, xylene, and PNAs to the groundwater" and that this is the major pathway of concern for risk assessment. However, groundwater analyses indicated the presence of lead to be much lower than drinking water standards, no detectable oil and grease (petroleum hydrocarbons), and only occasional, low detections of benzene, toluene, and xylene in the near vicinity of the FTA.

In addition, the presence of volatile organic chemicals was detected in soils in only 6 locations, and the maximum concentration detected for any volatile organic compound was xylene at 2.8 mg/kg (parts per million). Other volatile compounds were detected at less than 1 ppm concentrations in soils. In order to estimate what the impact of further migration of the volatile organics found in the soils might have on the groundwater, Jordan has applied the USEPA organic leaching model on the maximum concentrations of volatile organic compounds found in the soils to estimate what leachate concentrations from these contaminants would be. This leachate would then be diluted several fold upon merging with the groundwater and migrating downgradient.

<u>VOC</u>	<u>Maximum Conc in soil, ppm</u>	<u>Estimated leachate conc, mg/l</u>
Xylene	2.8	0.032
Benzene	0.009	0.0015
Ethylbenzene	0.1	0.003
Tetrachloroethylene	0.037	0.0015
Toluene	0.13	0.0058
Chlorobenzene	0.02	0.0015

The groundwater data also reflect the low potential for contamination of groundwater by compounds found in the soils at the FTA. Data collected in the site investigation support a recommendation of no further action with regard to residual compounds found at the FTA or in the site groundwater

(with the exception of 2-butanone contamination for which additional investigation has been recommended).

- c. We agree that the source of 2-butanone should be investigated. The data indicate that the 2-butanone did not originate from ANG FTA activities. However, this site characterization report is limited to the fire training area and a comprehensive evaluation of the entire airport is not within the scope of this investigation. We recommend that any comprehensive evaluation of the airport also evaluate other tenants on airport property and their past or present use of hazardous substances.

DETAILED COMMENTS

Attachment A

1. The soil samples in which lead was found include both shallow and deep soil samples. Table 5-4 includes shallow soil samples (0.5 to 4.0 feet), where lead was found in 58 samples. Lead was detected in 16 deeper soil samples as shown in Table 5-5.
2. Contaminant concentration values and tables will be checked for consistency.
3. See response to summary comments a and b.
4. Soil samples below the water table which were analyzed for oil and grease were also analyzed for VOCs, however, no VOCs were detected below the water table and therefore were not included in Figures 5-15 and 5-19. All the soil analytical results are also included in Appendix E.
5. JCP-1 to JCP-6 are composite soil samples and will be shown on Figure 5-1.
6. Oil and grease bound to soil or dust particles can migrate short distances due to wind action.

7. Agreed. These concerns should be addressed to the Suffolk County Airport Authority which owns the property. Additional action could be taken to increase security and prevent indiscriminate dumping on airport property.
8. See response to summary comments a and b.
9. Appendix E lists the chemical analysis for soil. The chemical analyses for groundwater are listed in Appendix I and include 2-butanone concentrations for MW-107B and MW-101B.
10. Soil samples at locations 31 and 32 were chosen as background samples. This statement will be added to the text of the report. Chemical analyses for JSS-31 and JSS-32 are included in Appendix E and are shown in the tables and figures in the text.
11. The values contained in Figures 5-12, 5-13, and 5-14 are laboratory analytical results for oil and grease. Contours were not prepared for either oil and grease or VOC field screening results. We feel it is more appropriate and more accurate to use the laboratory results when available.
12. A search of the town records and an inspection of the area within 1 mile downgradient of the FTA did not reveal any known water supply wells other than the municipal well field. This statement will be added to the report.

13. At the concentrations present in MW-107B and MW-107A, 2-butanone is completely soluble in water and will likely migrate with groundwater (i.e., not as a non-aqueous phase liquid). Based on the dilution factor calculations included in Appendix J, the 2-butanone concentrations found in MW-107A and MW-107B can be considered "accurate".
14. Appendix E will be modified to include these comments.
15. Soil sample depths are indicated within the Jordan point prefixes (The letter A, B or C in the number indicates the sample depth with A-0.5ft., B-2ft., C-4ft.; eg., JSS009BX01 indicates that the soil sample was taken at the B, or 2 foot depth). The depths in Appendix E will be corrected to reflect the appropriate depth for each sample.
16. The table will be corrected.
17. Page numbers will be added to the appendices and Appendix E will be checked for accuracy.

Attachment B

These comments have been addressed in the summary comment responses above.

Attachment C

The introductory comment discusses the migration of soil contaminants into groundwater and then into water supply systems being a major pathway of concern for risk assessment. However, groundwater analyses indicated the presence of lead to be much lower than drinking water standards, no detectable oil and grease (petroleum hydrocarbons), and only occasional, low detections of benzene, toluene, and xylene in the near vicinity of the FTA. In addition, the presence of volatile organic chemicals was detected in soils in only 6 locations, and the maximum concentration detected for any volatile organic compound was xylene at 2.8 mg/kg (parts per million). Other volatile compounds were detected at less than 1 ppm concentrations in soils. In order to estimate what the impact of further migration of the volatile organics found in the soils might have on the groundwater, Jordan has applied the USEPA organic leaching model on the maximum concentrations of volatile organic compounds found in the soils to estimate what leachate concentrations from these contaminants would be. This leachate would then be diluted several fold upon merging with the groundwater and migrating downgradient.

<u>VOC</u>	<u>Maximum Conc in soil, ppm</u>	<u>Estimated leachate conc, mg/l</u>
Xylene	2.8	0.032
Benzene	0.009	0.0015
Ethylbenzene	0.1	0.003
Tetrachloroethylene	0.037	0.0015
Toluene	0.13	0.0058
Chlorobenzene	0.02	0.0015

The groundwater data also reflect the low potential for contamination of groundwater by compounds found in the soils at the FTA. Data collected in the site investigation support a recommendation of no further action with regard to residual compounds found at the FTA or in the site groundwater (with the exception of 2-butanone contamination for which additional investigation has been recommended).

With regard to the location of the nearest groundwater use, the Suffolk County Water Authority Meeting House Road Wellfield is located approximately 3/4 mile from the FTA. No other groundwater users were found within one mile downgradient of the FTA.

1. This time frame (5 weeks) was used as representative of a typical duration of construction for such activities as maintenance of that portion of the taxiway adjacent to the FTA. The estimate is for repair or replacement of the FTA concrete hardstand or that portion of the concrete taxiway immediately adjacent to the FTA. As noted in Section 11.6.1 of the report, the general public's exposure to the FTA is very limited,

although not completely restricted. The airport is fenced, but not securely locked. The airport personnel may want to consider installing a fence around the FTA during any such construction, but this is considered a very conservative measure. It is not expected that the exposure to trespassers (e.g., young teens) could be sufficient to pose a risk because the duration of construction (and thus exposed soils) is short. It is not expected that airport personnel, other than the construction crew, would be at the FTA during construction.

2. The parameters for dermal absorption were taken from referenced texts, e.g., exposed surface area from Anderson et al., 1985 and The Superfund Public Health Evaluation Manual (USEPA, 1986). The Superfund Exposure Assessment Manual (SEAM) was published in 1987. Although it was not available when writing the risk assessment for the FTA, the equations used for calculating dermal exposure in this risk assessment are functionally the same as those presented in Appendix A of the SEAM. The risk assessment is in conformance with the SEAM.
3. The value of 1.0 ug/m^3 of lead from fugitive dust is based on the following document: "Review of the National Ambient Air Quality Standard for Lead: Assessment of Scientific and Technical Information: OAQPS Draft Paper, USEPA, 1986 (as noted on page 85). To be even more conservative, the estimated concentration taken from the OAQPS document was multiplied by a factor of 10.

4. According to USEPA (1986a), the "hazard index", H.I., is calculated as follows:

$$H.I. = \frac{\text{Body Dose}}{\text{Reference Level}}$$

The body dose is derived from the exposure scenario, and the reference level is based on the NAAQS. The report is correct as written; no changes were made in text.

5. The PNA concentrations in section 5.5.3 have been clarified. The maximum total PNA detected was 12.2 ppm, the maximum single compound PNA detected was benzo(a)anthracene at 9.6 ppm. Appendix E does reflect the value of 12.2 ppm referenced in the text. Values which were estimated values because they were below the detection limit (indicated by a "J") were not reported in Table 5-8. In addition, the concentrations in Appendix E are in ppb, not ppm. The risk assessment text on PNA concentrations has been revised to reflect total carcinogenic PNA concentrations. For phthalates, the average concentration (0.119 ppm) of surface soils (0-2 feet depth) and the maximum concentration (1.11 ppm) were used to calculate most probable and realistic worst case risk, respectively.

6. Page 2, First Paragraph.

The text on pages 86-88 has been modified to present the calculations for dermal exposure. In addition, a summary table (Table 11.4) has been added to Section 11.7.

6. Page 2, Second Paragraph.

The soil adherence rate of 2.77 mg/cm^2 is for Kaoloin clays which have very different adherence properties from the sandy soils at the Suffolk County Airport. For dermal contact with soil contaminants, Jordan used 0.5 mg/cm^2 and 1.5 mg/cm^2 which are considered to adequately bracket the exposure estimate for the sandy soils at this site.

6. Page 2, Third Paragraph.

A new table has been incorporated into the text which demonstrates that risk from dermal exposure is at least an order magnitude less than that from inhalation exposure.

6. Page 3.

The toxicological profile for xylene has been revised to include its noncarcinogenic effects.

7. The soil samples were not filtered in the field. The analyses were performed using the USEPA Target Compound List Contract Laboratory Program-Caucus Inorganic Protocol (CLP-CIP) and are for total lead. During analysis, the soil is "digested" using nitric acid, then the acid is filtered using a Whatman No. 42 filter. This USEPA method does not distinguish between organic and inorganic lead; all the lead is dissolved

during the digestion procedure. The risk calculations are for inorganic lead, the only form for which EPA publishes toxicity information.

SECTION 4

U.S. AIR FORCE COMMENTS AND RESPONSES

890621
0031.0.0



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC 20332-5000

12 JAN 1986

REPLY TO
ATTN OF:

LEEVO

SUBJECT:

Review Comments on the Suffolk County Airport Fire Training
Area (FTA) Final Draft Site Characterization Report

TO:

MR BILL OWENS
HAZWRAP Project Manager
Post Office Box Y
Oak Ridge TN 37831

1. Subject comments we have are as follows:

a. Page 1, para 1: The historical information now contained in this paragraph appears to be incorrect. During WWII the airport operated as Westhampton Beach Army Airfield (WBAAF) under the auspices of the U.S. Army not the U.S. Air Force. WBAAF was deactivated in Nov 1945. From 1948-51 the field was leased and used by the Arabian American Oil Company (ARAMCO). Recommend the contractor verify the historical information now contained in the report and revise as required.

b. Page 3: The Executive Summary should briefly address the alternatives evaluated to include justification for selection of the no action alternative.

c. Page 4, para 1: Again, stated history of Air Force operation is questionable. The U.S. Army operated the field until 1945, Air Force operation did not begin until 1951. The contractor needs to verify this information and revise the report as necessary.

d. Pages 19, 30, 31, 32 and 47: Page numbers need to be consistent in size and location as in the rest of the document.

e. Page 25: Symbol used in legend to identify wells installed by E.C. Jordan needs to match symbol used on figure.

f. Page 29: Need to indicate that numbers across top of table are depth of sample and show units (feet).

g. Page 48: Notes 1 and 2 should reference figure 5-18 instead of 5-1.

h. Page 49: Notes 1 and 2 should reference figure 5-18 instead of 5-1.

- Scott J Smith

SELT L. SALEM, NEDER, 1945
 1945-1946, 1947-1948, 1949-1950
 1951-1952, 1953-1954, 1955-1956
 1957-1958, 1959-1960, 1961-1962

RESPONSE TO DEPARTMENT OF THE AIR FORCE COMMENTS

Cover Letter by Scott L. Smith

SUBJECT COMMENTS

- a. The historical information outlined in this comment will be included in the final report.
- b. Because the risk assessment indicated no significant risk to human health or the environment, no soil cleanup alternatives were evaluated. An initial screening of groundwater alternatives was performed for 2-butanone in groundwater. No alternative for 2-butanone remediation was recommended because the 2-butanone was not attributable to ANG activities at the FTA.

Comments c through j will be incorporated into the final report.